6510
RETURN TO CODE ~~6522~~ FILES

TYPE 210-A SUPER-SONIC OSCILLATOR

INSTRUCTION MANUAL

BOONTON RADIO CORPORATION
BOONTON, NEW JERSEY
U. S. A.

6510
RETURN TO CODE ~~6522~~ FILES

TYPE 210-A SUPERSONIC OSCILLATOR

INSTRUCTION MANUAL

BOONTON RADIO CORPORATION

BOONTON, NEW JERSEY

U. S. A.

OPERATING INSTRUCTIONS

FOR THE

TYPE 210-A SUPER-SONIC OSCILLATOR

JUNE, 1942

GENERAL:

The Type 210-A Super-Sonic Oscillator has been designed primarily as an accessory unit to operate with the Type 160-A Meter between 1000 cycles and 50 kilocycles, and as a general purpose oscillator providing a source of signal voltage over a frequency range of 1000 cycles to 100 kilocycles.

The design of the unit incorporates a resistance capacitance oscillator followed by an output amplifier with cathode degeneration. The use of these features insures good wave form and a high order of stability.

UNPACKING:

Before operating the Type 210-A Super-Sonic Oscillator, a careful inspection should be made to make certain that the tubes are seated in their sockets, and the two lamps on the left of the chassis are firmly secured in their sockets.

POWER SUPPLY:

The line voltage and frequency for which the Super-Sonic Oscillator is designed is indicated on the nameplate located on top of the cover. No other voltage or frequency should be used.

A switch is provided on the front panel for turning the Super-Sonic Oscillator on or off. In the OFF position, this switch disconnects one side of the power line from the transformer which supplies all power to the instrument.

PRECAUTIONS:

If it is found necessary to ground the Super-Sonic Oscillator, a ground connection may be made to the binding post of the 5000 ohm output.

Caution: Be certain that any tubes replaced are in the correct sockets. Failure to do this may result in damage to the instrument or tubes.

Failure to operate properly is generally due to defective tubes. The Super-Sonic Oscillator is shipped with a complete complement of tested tubes which have operated correctly in the instrument before shipment. If, however, the instrument fails to operate properly the tubes should be replaced one-by-one with spare tubes of the correct type to locate any tube damaged during shipment.

DESCRIPTION

TUBES:

The following tubes are used in the Super-Sonic Oscillator:

1	- Oscillator tube	6 SK 7
1	- Phase Inverter tube	6 F 6
1	- Amplifier tube	6 F 6
1	- Rectifier tube	5 W 4
2	- Resistor lamps	S-6, 120V, 6 watt
1	- Pilot lamp	Mazda #47

All the tubes and resistor lamps are accessible by lifting the hinged cover. Access to the pilot lamp is obtained by removing the panel screws and removing the panel and attached chassis from the cabinet.

CONTROLS:

All the controls required for setting the frequency and adjusting the output level are located on the front panel. These controls are as follows:

Frequency: The frequency range is covered in two bands, the higher range being a multiple of ten times the lower. The selection of desired range is accomplished by turning the switch located to the left of the Frequency Dial to either the X1 or X10 position. With the switch in the X1 position, the frequency is read directly on the Dial. With the switch in the X10 position, the Dial reading is multiplied by ten.

Output: The output level is controlled by the knob to the right of the Frequency Dial. Turning this knob in a clockwise direction increases the output. This control varies the output continuously from zero to maximum.

OUTPUT CIRCUITS:

Two outputs are provided, one a low impedance circuit which is brought out to a phone jack located on the front panel. The second output of 5000 ohms impedance terminates at a pair of binding posts on the front panel. The sleeve of the phone jack low impedance output is grounded, as well as the lower binding post of the 5000 ohm output.

The low impedance output matches the thermocouple circuit of the Type 160-A Q-Meter and may be connected directly by means of the plug terminated connecting cable supplied with the Q-Meter. As a precautionary measure, the output control of the Type 210-A Superiodic Oscillator should be turned to the zero position before connecting the Q-Meter, when turning the Type 210-A ON or OFF, or switching bands. This is necessary because there is a maximum stabilization period of two seconds when the output of the Type 210-A will overload the thermocouple of the Q-Meter.

Instructions concerning the use of a Q-Meter with an external oscillator are given in the Q-Meter Instruction book.

The high impedance output has been provided so that the instrument may be used as a general purpose oscillator.

OUTPUT LEVEL:

The output level available at low impedance output jack is sufficient to operate the Type 160-A Q-Meter.

The high impedance output will furnish a maximum of about 50 volts across an external 5000 ohm resistive load.

CIRCUIT #	BRC #	DESCRIPTION
		RESISTORS
R1	80600	230,000 ohms, 1/2 watt, plus/minus 1/2%.
R2	80454	22,000 ohms. 1/2 watt, plus/minus 1/2%.
R3	80600	230,000 ohms, 1/2 watt, plus/minus 1/2%.
R4	80454	22,000 ohms. 1/2 watt, plus/minus 1/2%.
R5	81104	1,000 ohms, Potentiometer.
R6	80509	75,000 ohms, 1 watt, plus/minus 10%.
R7	80408	25,000 ohms, 1 watt, plus/minus 10%.
R8	81404	5,000 ohms, Potentiometer.
R9	80519	100,000 ohms, 1/2 watt, plus/minus 10%.
R10	80309	5,000 ohms, 1 watt, plus/minus 10%.
R11	80132	500 ohms, 1 watt, plus/minus 10 %.
R12	81404	50,000 ohms, Potentiometer.
R13	80162	500 ohms, 2 watt, plus/minus 10%.
R14	80145	1,000 ohms, 10 watt, wire wound, plus/minus 10%.
R15	80521	100,000 ohms, 1 watt, plus/minus 10%.
R16	81320	20,000 ohms, Potentiometer.
R17	80351	20,000 ohms, 1 watt, plus/minus 10%.
R18	80232	3,000 ohms, 1/2 watt, plus/minus 10%.
R19	90902	Lamp, 6 watt, 120 volt candelabra base
R20	80135	500 ohms, 10 watt ±5%
R21	80028	33 ohms, 1/2 watt ±5%
		CONDENSERS
C1) C2) C3) C4)	84016	4 Gang Condenser, 15-360 mmfd.
C5	83025	8 mfd. Electrolytic, 450 w.v.
C6	82401	.01 mfd. Paper, 600 w.v.
C7	83025	8 mfd. Electrolytic, 450 w.v.
C8	83032	50 mfd. Electrolytic, 50 w.v.
C9) C10) C11)	83050	10 - 10 - 10, Electrolytic, 450 w.v.
C12	83003	.1 mfd. Paper, 400 w.v.
C13	84039	7-45 mmfd. Ceramic Trimmer.
C14	82401	.01 mfd. Paper, 600 w.v.
C16	83011	.25 mfd. Paper, 400 w.v.
		INDUCTANCES
L1	85416	25 mhy. Choke
FC1	85402	Filter Choke 10 hy. 70 ma.
T1	85010	Power Transformer
T2	85005	Output Transformer

SUB	ITEM	CHANGE	DATE	APP.
B C	1	ADDED Remove C-15 Add R20 R21 C16	3/19/45 3-21-45	

MAT:

FINISH:

USED ON: 210-A

DWN. BY A. C.

DATE 3-19-45

CHK. BY

DATE 3-19-45

APP. BY

DATE 3-19-45

LIMITS: DECIMAL ± .002 FRACTIONAL ± 1/64

TABLE OF CIRCUIT ELEMENT NUMBERS VERSUS ELECTRICAL VALUES FOR 210-A.

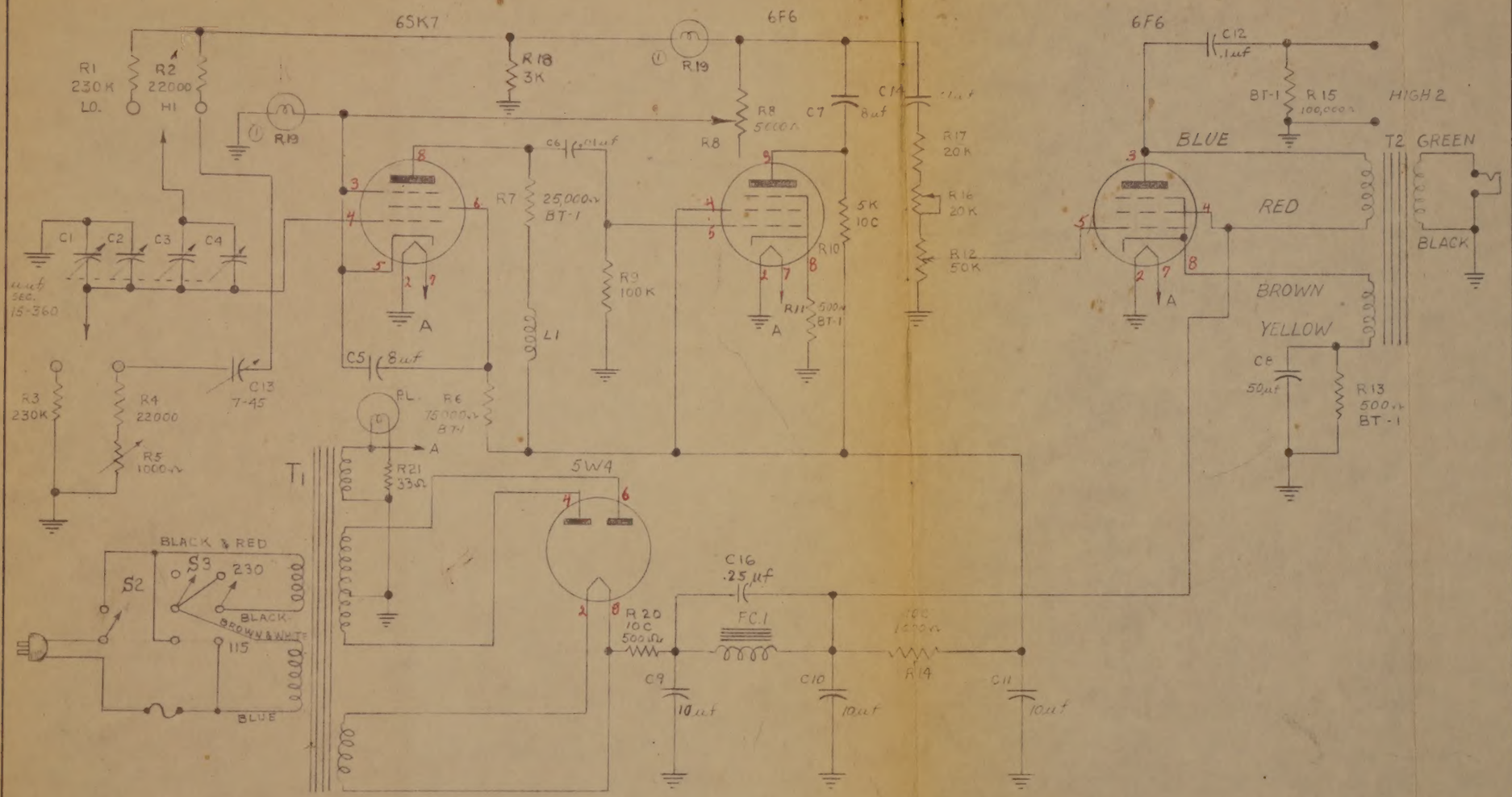
BOONTON RADIO CORP.
BOONTON, N. J.

SCALE:

S6021-C

210-W2

"ALBANENE" No. 195T K&E CO., N.Y. ±
REG. U.S. PAT. OFF.



SUB	ITEM	CHANGE	DATE	APP.
B		ADDED S3	4/16/45	
C	1	WAS - RL	7/26/45	
D		FUSE, R20, R21, 4 C's added 10 μf. Was 1 μf. - C7 Removed	1/23/47	

LIMITS: DECIMAL ± .002 FRACTIONAL ± 1/64

SCHEMATIC - 210-A

MAT:

FIN:

DRAWN BY H.R.V.	USED ON
DATE 8-11-44	
CHECKED BY [illegible]	
DATE 8/12/44	
APPR. BY [illegible]	
DATE 8/12/44	210-A

BOONTON RADIO CORP.
BOONTON, N. J.

S6090 D

www.manualsplus.com
1002245